ELSEVIER

Inorganica Chimica Acta

Volume 235, Numbers 1–2, July 1995

# Contents

**Preliminary Communication**

$\eta^3$-Azatrimethylenemethane complexes of platinum. Structural characterization of $(PPh_3)_2Pt(\eta^3\text{-}CH_2C(4\text{-}NC_6H_4NO_2)\text{-}CHPh)$ . . . . . 1
M.W. Baize, V. Plantevin, J.C. Gallucci, A. Wojcicki (Columbus, OH, USA)

**Articles**

A $^1H$ NMR study of the complex of cobalt(II) with 2,5,8,11-tetramethyl-2,5,8,11-tetraazadodecane in aerated aqueous solutions . . . . . 5
I. Bertini, L. Messori (Florence, Italy), G. Golub, H. Cohen, D. Meyerstein (Beer Sheva, Israel)

A study of cobalt catalysis and copper modification in the coupled decompositions of hydrogen peroxide and peroxomonosulfate ion . . . . . 9
J. Kim, J.O. Edwards (Providence, RI, USA)

The effect of steric hindrance in the synthesis of corrolates via the cobalt catalyzed cyclization of 2-($\alpha$-hydroxyalkyl)-pyrroles . . . . . 15
S. Licoccia, E. Tassoni, R. Paolesse, T. Boschi (Rome, Italy)

Experimental and theoretical study of a paradigm Jahn–Teller molecule, all-*trans*-$CrCl_2(H_2O)_2(pyridine)_2$, and the related *trans*-$CrCl_2(pyridine)_4 \cdot acetone$ . . . . . 21
F.A. Cotton, L.M. Daniels, X. Feng, D.J. Maloney (College Station, TX, USA), C.A. Murillo (College Station, TX, USA and Ciudad Universitaria, Costa Rica), L.A. Zúñiga (Ciudad Universitaria, Costa Rica)

Equilibrium and kinetic studies on the displacement of pyridine by chloride ion in pyridine[2,6-bis(methylthio-methyl)pyridine]palladium(II) perchlorate . . . . . 29
L. Canovese, L. Cattalini, F. Visentin, P. Uguagliati, L. Gemelli (Venice, Italy)

4-Amino-3-methyl-1,2,4-$\Delta^2$-triazoline-5-thione: an example of thione–thiol tautomerism and stabilization of Cu(I) and Au(I) complexes . . . . . 37
M. Biagini Cingi, F. Bigoli, M. Lanfranchi, E. Leporati, M.A. Pellinghelli, C. Foglia (Parma, Italy)

Solvent and temperature effects in the mechanism of allyl amination of the $\alpha$-diimine complex $[Pd(\eta^3\text{-}C_3H_5)(C_5H_4N\text{-}2\text{-}CH{=}NC_6H_4OMe\text{-}4)]^+$ by piperidine and morpholine . . . . . 45
L. Canovese, F. Visentin, P. Uguagliati (Venice, Italy), B. Crociani (Rome, Italy), F. Di Bianca (Palermo, Italy)

Symmetric or unsymmetric cleavage of the bridging system in $[M_2(\mu\text{-}C_6F_5)_2(C_6F_5)_4]^{2-}$ ($M_2 = Pt_2$, $Pd_2$ or PtPd) with 2,2′-bipyridine or 1,10-phenanthroline. Molecular structure of $[PPN]_2[(C_6F_5)_3Pt(\mu\text{-bpy})Pt(C_6F_5)_3]$ and $[NBu_4][Pt(C_6F_5)_3\text{-}(phen)]$ . . . . . 51
R. Usón, J. Forniés, M. Tomás, F. Martínez, J.M. Casas, C. Fortuño (Zaragoza, Spain)

Reactions of $(\eta^5\text{-}C_5Me_5)Ir$(2,5-dimethylthiophene) with $S_8$, $O_2$, $SO_2$ and $CS_2$ . . . . . 61
J. Chen, R.J. Angelici (Ames, IA, USA)

Interchain interactions and three-dimensional magnetic ordering in Mn(II)Cu(II) chain compounds; crystal structure and metamagnetic properties of $MnCu(pbaOH)(H_2O)_3 \cdot 2H_2O$, with pbaOH = 2-hydroxo-1,3-propylenebis(oxamato) . . . . . 69
V. Baron, B. Gillon (Gif-sur-Yvette, France), J. Sletten (Bergen, Norway), C. Mathoniere, E. Codjovi, O. Kahn (Orsay, France)

Reactions of Rh– and Ir–bis(iminophosphoranyl)methanide compounds with electrophiles; a trapped cation–anion complex in the oxidative addition of iodine to a $d^8$ metal centre and X-ray crystal structure of $[IrI\{CH(PPh_2{=}N\text{–}C_6H_4\text{–}CH_3\text{-}4)_2\}\text{-}(COD)]I$, containing two fused four-membered metallacycles . . . . . 77
P. Imhoff, J.H. Gülpen, K. Vrieze (Amsterdam, Netherlands), W.J.J. Smeets, A.L. Spek (Utrecht, Netherlands), C.J. Elsevier (Amsterdam, Netherlands)

Elsevier Science S.A.

Carbon monoxide substitution of anionic and neutral ($\eta^5$-dicarbollyl)$Rh(CO)_2$ with phosphines and phosphites: a kinetic and mechanistic study of ring slippage as compared to ($\eta^5$-$C_5H_5$)$Rh(CO)_2$ . . . . . 89
J.K. Shen, S. Zhang, F. Basolo (Evanston, IL, USA), S.E. Johnson, M.F. Hawthorne (Los Angeles, CA, USA)

Acid–base and metal ion-binding properties of 2′-deoxycytidine 5′-monophosphate ($dCMP^{2-}$) alone and coordinated to *cis*-diammine-platinum(II). Formation of mixed metal ion nucleotide complexes. . . . . 99
B. Song (Basel, Switzerland), G. Feldmann (Dortmund, Germany), M. Bastian (Basel, Switzerland), B. Lippert (Dortmund, Germany), H. Sigel (Basel, Switzerland)

Chemical applications of topology and group theory
28. Carbonyl polyhedra in metal carbonyl clusters. . . . . 111
R.B. King (Athens, GA, USA)

Characterization of titanocene(III) complexes of $\beta$-diketonates by electrochemical, spectroscopic and crystallographic methods: stabilization of oxidized and reduced $\beta$-diketonate radicals by acetyl and titanocene derivatization, respectively. . . . . 117
A.M. Bond, R. Colton (Bundoora, Vic., Australia), U. Englert (Aachen, Germany), H. Hügel, F. Marken (Bundoora, Vic., Australia)

Coordination compounds of a didentate pyrazole-containing ligand. Spectroscopic analyses and crystal structures of bis-[chloro-$\mu$-chloro-{*N*,*N*′-(2-(3,5-dimethyl-1-pyrazolyl)ethyl)ethylamine}nickel(II)] and [trichloro-{*N*-(2-(3,5-dimethyl-1-pyrazolyl)ethyl)hydro-ethylammonium}copper(II)] . . . . . 127
W.L. Driessen, R.M. de Vos, A. Etz, J. Reedijk (Leiden, Netherlands)

Oxomolybdenum(V) polyanion clusters. Hydrothermal syntheses and structures of $(NH_4)_5Na_4\{Na[Mo_6O_{12}(OH)_3(O_3PC_6H_5)_4)]_2\}\cdot 6H_2O$ and $(C_6H_5CH_2NMe_3)_4K_4\{K_2[Mo_6O_{12}(OH)_3(O_3PC_6H_5)_4]_2\}\cdot 10H_2O$ and their relationship to the binuclear $(Et_4N)[Mo_2O_4Cl_3(H_2O)_3]\cdot 5H_2O$. . . . . 135
M.I. Khan, Q. Chen, J. Zubieta (Syracuse, NY, USA)

Linear co-polymerisation of *trans*-$[Pt(C_2Bu^t)_2(PMe_2Ph)_2]$ with copper(I) chloride . . . . . 147
S. Yamazaki (Kochi, Japan), A.J. Deeming (London, UK), M.B. Hursthouse, K.M.A. Malik (Cardiff, UK)

A molecular cluster approach to the study of the bonding of CO and $NH_3$ to a $d^{10}$ ion on ZnO(0001) and CuCl(111) . . . . . 151
M. Casarin, E. Tondello, A. Vittadini (Padua, Italy)

Ferromagnetic intermolecular coupling in the nitronyl nitroxide radical 2-(4-thiomethylphenyl)-4,4,5,5-tetramethylimidazoline-1-oxyl-3-oxide, NIT(SMe)Ph . . . . . 159
A. Caneschi, F. Ferraro, D. Gatteschi, A. le Lirzin, E. Rentschler (Florence, Italy)

2,2′:6′,4″-Terpyridine: a cyclometallating analogue of 2,2′:6′,2″-terpyridine for metallosupramolecular chemistry. . . . . 165
E.C. Constable, A.M.W. Cargill Thompson, J. Cherryman (Basel, Switzerland), T. Liddiment (Cambridge, UK)

$Ph_3P{=}Se$ as a convenient synthon for one-step syntheses of $Ph_3P$-substituted selenido carbonyl iron and ruthenium clusters. Crystal structures of $Fe_3(\mu_3\text{-}Se)(\mu\text{-}CO)(CO)_7(PPh_3)_2$, $M_3(\mu_3\text{-}Se)_2(CO)_7(PPh_3)_2$ (M = Fe or Ru) and $Ru_4(\mu_4\text{-}Se)_2(\mu\text{-}CO)_2(CO)_7(PPh_3)_2$ . . . . . 173
P. Baistrocchi, D. Cauzzi, M. Lanfranchi, G. Predieri, A. Tiripicchio, M. Tiripicchio Camellini (Parma, Italy)

Synthesis of monothiohydroxamic ligands and their lead complexes. Structures of *N*-methyl-3-pyridothiohydroxamic acid, bis(*N*-methyl-3-pyridothiohydroxamato) lead(II) and bis(*N*-cyclohexyl-phenylacetothiohydroxamato) lead(II). . . . . 185
S. Rupprecht, S.J. Franklin, K.N. Raymond (Berkeley, CA, USA)

Alkali metal-responsive geometric and spectral changes in a cobalt(II) complex of a constrained dicarboxylate: a carboxylate shift-mediated metallochromoionophore. . . . . 195
S.P. Watton, M.I. Davis, L.E. Pence, J. Rebek, Jr., S.J. Lippard (Cambridge, MA, USA)

Steric constraints and addition reactions in platinum(II) complexes containing 2,9-dimethyl-1,10-phenanthroline ($Me_2$-phen). X-ray crystal structures of $[PtBr_2(Me_2\text{-phen})]$ and $[PtI_2(Me_2\text{-phen})]$ . . . . . 205
R.J.H. Clark (London, UK), F.P. Fanizzi, G. Natile, C. Pacifico (Bari, Italy), C.G. van Rooyen, D.A. Tocher (London, UK)

Synthetic methodologies for tripodal phosphines. The preparation of $MeSi(CH_2PPh_2)_3$ and $n\text{-}BuSn(CH_2PPh_2)_3$ and a comparison of their rhodium(I) and ruthenium(II) coordination chemistry. The X-ray crystal structures of $[Rh(NBD)\{n\text{-}BuSn(CH_2PPh_2)_3\}](OTf)$ and $[Rh(NBD)\{MeSi(CH_2PPh_2)_3\}](OTf)$ . . . . . 215
S. Herold, A. Mezzetti, L.M. Venanzi (Zurich, Switzerland), A. Albinati, F. Lianza (Milan, Italy), T. Gerfin, V. Gramlich (Zurich, Switzerland)

Mono- and polynuclear Schiff base complexes derived from polyoxadiamines. . . . . 233
A. Aguiari, N. Brianese, S. Tamburini, P.A. Vigato (Padua, Italy)

Dynamics of cobalt(II) spin-equilibrium complexes . . . . . 245
J.K. Beattie, R.A. Binstead, M.T. Kelso, P. Del Favero (Sydney, NSW, Australia), T.G. Dewey, D.H. Turner (Rochester, NY, USA)

Vinylidene transition-metal complexes
XXXVI. Olefin, alkyne, vinylidene, carboxylate and hydrido complexes containing $[Rh(P^tBu_2Me)_2]$ as a molecular unit. . . . . 253
F. Kukla, H. Werner (Würzburg, Germany)

Mono-, di- and trinuclear gold(I) complexes of new phosphino-substituted amides: initial steps to chlorogold(I)-diphenylphosphino-terminated dendrimers . . . . . 263
P. Lange, A. Schier, H. Schmidbaur (Garching, Germany)

Linear trinuclear copper(II) complexes derived from acyclic hexadentate Schiff base ligands . . . . . 273
N.A. Bailey, D.E. Fenton, Q.-Y. He, N. Terry (Sheffield, UK), W. Haase, R. Werner (Darmstadt, Germany)

Direct evidence for a rate determining chelate ring closure mechanism in the reaction of a platinum(II) complex with bidentate nitrogen ligands. . . . . 281
R. Romeo, G. Alibrandi, G. Arena, L. Monsù Scolaro, M.R. Plutino (Messina, Italy)

Nickel(II) and nickel(0) complexes containing 2-pyridylphosphine ligands, including water-soluble species . . . . . 291
I.R. Baird, M.B. Smith, B.R. James (Vancouver, BC, Canada)

Syntheses and structures of dicyanobis(oxazolidin-2-ylidene)palladium(II) and platinum(II) complexes . . . . . 299
U. Kernbach, W.P. Fehlhammer (Berlin, Germany)

A strongly fluorescent organoplatinum complex . . . . . 307
K.-T. Aye, R.J. Puddephatt (London, Ont., Canada)

Coordination equilibria and water exchange kinetics of lanthanide(III) propylenediaminetetraacetates and other magnetic resonance imaging related complexes . . . . . 311
N. Graeppi, D.H. Powell, G. Laurenczy, L. Zékány, A.E. Merbach (Lausanne, Switzerland)

Stabilization and reaction behaviour of a terminal phosphido unit on a mononuclear Pt(II) centre. Synthesis and X-ray structure of a cationic diphenylphosphine complex $[Pt\{C_6H_3(CH_2NMe_2)_2\text{-}2,6\}(PHPh_2)][OSO_2CF_3]$ and a diphenylphosphido-bridged Pt(II)/Pd(II) complex $[Pt\{C_6H_3(CH_2NMe_2)_2\text{-}2,6\}(\mu\text{-}PPh_2)Pd(C_6H_4CH_2NMe_2\text{-}2)\text{-}(H_2O)][BF_4]\cdot CH_2Cl_2$ . . . . . 327
F. Maassarani, M.F. Davidson, I.C.M. Wehman-Ooyevaar, D.M. Grove, M.A. van Koten, W.J.J. Smeets, A.L. Spek, G. van Koten (Utrecht, Netherlands)

Metathetic reactions involving ditungsten hexapivalate. Preparation and structures of $W_2(O_2C^tBu)_2(O^tBu)_2(N^iPr_2)_2$, $W_2(O_2C^tBu)_4(N^iPr_2)_2$, $W_2(O_2C^tBu)_2(O^tBu)_4$ and $Na_2W_4O_4Cp_2(O_2C^tBu)_6$ solvate where $Cp = C_5H_5$. . . . . 339
T.A. Budzichowski, M.H. Chisholm, K. Folting, M.G. Fromhold, W.E. Streib (Bloomington, IN, USA)

Absorption spectra of zircon crystals doped with Cr(IV): $ZrSiO_4:Cr^{4+}$ . . . . . 349
A. Belletti, R. Borromei, L. Oleari (Parma, Italy)

Solution structures and dynamics of $M_3(CO)_{12-x}(NCCH_3)_x$ ($M = Ru$, $x = 1, 2, 3$; $M = Os$, $x = 1, 2$) . . . . . 357
S. Aime, W. Dastrù, R. Gobetto, J. Krause, L. Violano (Turin, Italy)

Palladium(II) complex formation by indole-3-acetate. Mixed ligand complexes involving a unique spiro-ring formed by cyclopalladation. . . . . 367
M. Takani (Kanazawa, Japan), H. Masuda, O. Yamauchi (Nagoya, Japan)

Preparation and characterization of a new series of Ti(III) hydroborates supported by silazanate ligands . . . . . 375
L. Scoles, S. Gambarotta (Ottawa, Ont., Canada)

SIMS methods in reactivity studies on metal oxides . . . . . 381
S. Daolio, B. Facchin, C. Pagura (Padua, Italy), A. De Battisti, S. Gelosi (Ferrara, Italy)

Transition metal complexes of L-aziridine-carboxylate . . . . . 391
T. Hauck, K. Sünkel, W. Beck (Munich, Germany)

Reactions and electrochemical behaviour of dithiocarbene complexes of platinum(II) . . . . . 397
U. Belluco, R. Bertani, R.A. Michelin, M. Mozzon (Padua, Italy), M.F.C. Guedes da Silva, J.J.R. Frausto da Silva, A.J.L. Pombeiro, W. Yu (Lisbon, Portugal)

## Notes

The vibrations of bridging carbonyl groups as more sensitive indicators of molecular geometry than terminal carbonyl groups in transition metal carbonyl cluster compounds
Part 2. Some $M_5$ species . . . . . 407
S.F.A. Kettle (Kingston, Ont., Canada), E. Diana, P.L. Stanghellini (Turin, Italy), R. Della Pergola, A. Fumagalli (Milan, Italy)

The synthesis, molecular and crystal structure of the bis(arene) hexaruthenium carbido-carbonyl isomers $Ru_6C(CO)_{11}(C_6H_4Me_2\text{-}1,3)(C_6H_5Me)$ . . . . . 413
P.J. Dyson, B.F.G. Johnson (Edinburgh, UK), D. Braga, F. Grepioni, C.M. Martin, E. Parisini (Bologna, Italy)

The reactions of dirhenium complexes with tris(diphenylphosphino)methane. The conversion of the dirhenium(III) complex *cis*-$Re_2(O_2CCH_3)_2Cl_4(py)_2$ to mononuclear *trans*-$ReCl_2[\eta^2\text{-}HC(PPh_2)_3]_2$ . . . . . 421
M.J. Siwajek, W. Wu, R.A. Walton (West Lafayette, IN, USA)

A new procedure to synthesize *cis*-$[Ru(NH_3)_4L_2]^{n+}$ species containing ruthenium(II) or ruthenium(III) using tetrammino-(3,4-diolatobenzoato)ruthenium(II) as precursor . . . . . 427
R.S. da Silva, E. Tfouni (São Paulo, Brazil), A.B.P. Lever (North York, Ont., Canada)

Conference Calendar . . . . . 431

Author Index of Volume 235 . . . . . 435

The publisher encourages the submission of articles in electronic form thus saving time and avoiding rekeying errors. A leaflet describing our requirements is available from the publisher upon request.